Application No.:	10/788,460
Filing Date:	March 1, 2004
Appellants:	Yigal BEJERANO et al.
Group Art Unit:	2617
Examiner:	Marcos L. Torres
Title:	METHODS AND DEVICES FOR PROVIDING A RELATIVE LEVEL OF FAIRNESS AND QoS GUARANTEES TO WIRELESS LOCAL AREA NETWORKS
Attorney Docket:	129250-000999/US

APPELLANTS' BRIEF ON APPEAL

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NOTICE REGARDING PREVIOUS PAYMENT OF APPEAL BRIEF FEE & REQUEST FOR REFUND OR CREDIT OF NOTICE OF APPEAL FEE

Sir/Madam:

In connection with the filing of Appellants' Appeal Brief on June 6, 2009 the Appellants note that no appeal brief fee is believed due because this is the second appeal brief the Appellants have filed; the first brief having been withdrawn based on the Examiner's re-opening of prosecution after the Appellants had paid the appeal brief fee.

More specifically, in accordance with MPEP§1208.02 and related regulations under 37 CFR 1.193 *et seq*, no fee is believed due in conjunction with filing of the Appellants' instant appeal brief.

Further, Appellants respectfully request that the $540 Notice of Appeal (NOA) fee paid by Appellants on April 23, 2009 be refunded or credited to their Deposit Account, No, 50-3777 because a previous NOA and fee had also been filed and paid for prior to the Examiner's re-opening of prosecution.

For the sake of completeness, if the Commissioner determines an appeal brief fee is due, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 50-3777 for any additional appeal brief fees required as well as fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

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<div align="center">**APPELLANTS' BRIEF ON APPEAL**</div>

I.   REAL PARTY IN INTEREST:

The real party in interest in this appeal is Lucent Technologies Inc. Assignment of the application was submitted to the U.S. Patent and Trademark Office and recorded at Reel 015033, Frame 0923.

II.   RELATED APPEALS AND INTERFERENCES:

There are no known appeals or interferences that will affect, be directly affected by, or have a bearing on the Board's decision in this Appeal.

III.   STATUS OF CLAIMS:

Claims 1, 5-9, 13-18 and 22-25 are pending in the application, with claims 1, 9 and 18 written in independent form. Claims 2-4, 10-12 and 19-21 are canceled.

Claims 1, 5-9, 13-18 and 22-25 were rejected under 35 U.S.C. § 103(a) based on U.S. Patent Application Publication No. 2005/0169222 to Ayyagari ("Ayyagari") in view of U.S. Patent Application Publication No. 2006/0039281 to Benveniste ("Benveniste") and U.S. Patent No. 6,504,837 to Menzel ("Menzel"). Claims 1, 5-9, 13-18 and 22-25 are being appealed.

IV.   STATUS OF AMENDMENTS:

A Request For Reconsideration (RFR) was filed on March 17, 2009. In an Advisory Action dated April 14, 2009, the Examiner stated that the RFR was considered but did not place the application in condition for allowance.

V.   SUMMARY OF CLAIMED SUBJECT MATTER:

(i).   Overview of the Subject Matter of the Independent Claims

The present invention is directed at methods and devices that may be used to allocate so-called Contention Free Periods (CFPs) to wireless access points in wireless, Local area networks (WLANs). More specifically, independent claim 1 reads as follows (specification citations are in parenthesis):

1.   **A method for providing a relative level of fairness and Quality of Service (QoS) in a wireless local area network (WLAN) network comprising:**
    identifying a set of non-interfering access points (paragraphs [0021] through [0023]);
    dividing a Contention-Free period (CFP) into one or more slots (paragraphs [0017], [0032], [0042]and [0045]);
    assigning one or more of the so divided slots to an identified access point based on the number of users associated with the access point (paragraph [0032]) **and to maximize a lower bound of a slot-to-user ratio** (paragraphs [0035] through [0039], [0042] and [0046] through [0048]);
    allowing only the identified set of non-interfering access points to transmit during a so divided CFP slot (paragraphs [0016], [0017] and [0030]); **and**
    allowing all access points to transmit after the end of the CFP (paragraph [0029]).

Independent claim 9 reads as follows:

9.   **A system for providing a level of fairness and Quality of Service (QoS) in a WLAN comprising:**
    a controller operable to;
    identify a set of non-interfering access points (paragraphs [0021] through [0023]);
    divide a Contention-Free period (CFP) into one or more slots (paragraphs [0017], [0032], [0042] and [0045]);

> assign one or more of the so divided slots to an identified access point based on the number of users associated with the access point (paragraph [0032]) and to maximize a lower bound of a slot-to-user ratio(paragraphs [0035] through [0039], [0042] and [0046] through [0048]);
>
> allow only the identified set of non-interfering access points to transmit during a so divided CFP slot (paragraphs [0016], [0017] and [0030]); and
>
> allow all access points to transmit after the end of the CFP(paragraph [0029]).

Independent claim 18 reads as follows:

18. A system for providing a relative level of fairness and Quality of Service (QoS) in a wireless local area network (WLAN) network comprising:

> means for identifying a set of non-interfering access points (paragraphs [0021] through [0023]);
>
> means for dividing a Contention-Free period (CFP) into one or more slots(paragraphs [0017], [0032], [0042] and [0045]);
>
> means for assigning one or more of the so divided slots to an identified access point based on the number of users associated with the access point (paragraph [0032]) and to maximize a lower bound of a slot-to-user ratio(paragraphs [0035] through [0039], [0042] and [0046] through [0048]);
>
> means for allowing only the identified set of non-interfering access points to transmit during a so divided CFP slot (paragraphs [0016], [0017] and [0030]); and
>
> means for allowing all access points to transmit after the end of the CFP(paragraph [0029]).

In order to make the overview set forth above concise the disclosure that has been included, or referred to, above only represents a portion of the total disclosure set forth in the Specification that supports the independent claims.

(ii). **The Remainder of the Specification Also Supports the Claims**

The Appellants note that there may be additional disclosure in the Specification that also supports the independent and dependent claims.

Further, by including the specification citations in parenthesis above the Appellants do not represent that this is the only evidence that supports the independent claims nor do Appellants necessarily represent that these citations alone can be used to fully interpret the claims of the present invention. Instead, the citations provide background support as an overview of the claimed subject matter.

VI.   GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL:

Appellants seek the Board's review and reversal of the rejection of claims 1, 5-9, 13-18 and 22-25 under 35 U.S.C. § 103(a) based on Ayyagari in view of Benveniste and Menzel.

VII.   ARGUMENTS:

A.   The Section 103 Rejections

Claims 1, 5-9, 13-18 and 22-25 were rejected under 35 U.S.C. § 103(a) based on Ayyagari in view of Benveniste and Menzel. Appellants respectfully disagree for at least the following reasons.

Claims 1, 9 and 18 (and through their dependencies, so too the remaining claims) include the feature of assigning one or more CFP divided slots to an identified access point based on the number of users associated with the access point and to maximize a lower bound of a slot-to-user ratio.

In the Final Office Action the Examiner acknowledges that neither Ayyagari nor Benveniste discloses or suggests this assignment feature. To make up for this deficiency the Examiner relies on Menzel.

The Examiner refers the Appellants to column 4, line 64 to column 5, line 50 of Menzel in support of the position that Menzel discloses a slot assignment feature that takes into consideration the maximization of a lower bound of a slot-to-user ratio. However, Menzel does not disclose or suggest such a feature.

Instead, Menzel appears to set forth methods that allow a base station to transmit during slots allocated to the base station and receive during slots that are not allocated to the base station. However, Menzel's transmission-reception scheme is wholly silent with respect to the maximization of a lower bound of a slot-to-user ratio.

The Examiner appears to take the position that the phrase "maximization of a lower bound of a slot-to-user ratio" can be interpreted to mean any disclosure of a slot-to-user ratio. This is incorrect. Words in a claim cannot be ignored in interpreting the claim. Thus, it is inappropriate for the Examiner to ignore the words "*maximization of a lower bound*" of a slot-to-user ratio.

Further, the Examiner's statement that his interpretation is based on paragraph [0037] (*see* the Advisory Action) of the instant specification is confusing. This paragraph clearly describes more than a slot-to-user ratio; it describes a *maximization of a lower bound* of such a ratio.

Yet further, Menzel's general statement that its time slot allocation is "load-dependent" reveals little to one skilled in the art. Said another way, there is nothing in Menzel to suggest to the skilled artisan that its allocation methodologies include the maximization of a lower bound of a slot-to-user ratio as in the claims of the present invention.

Accordingly, because neither Ayyagari, Benveniste nor Menzel taken separately or in combination disclose or suggest the assignment of one or more of divided slots to an identified access point based on the number of users associated with the access point and to maximize a lower bound of a slot-to-user ratio, the Appellants respectfully submit that the subject matter of claims 1, 5-9, 13-18 and 22-25 would not have been obvious to one skilled in the art at the time the present application was filed upon reading the disclosures of Ayyagari, Benveniste and Menzel.

Conclusion:

Appellants respectfully request that members of the Board reverse the decision of the Examiner and allow claims 1, 5-9, 13-18 and 22-25.

The Commissioner is authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 50-3777 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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VIII. CLAIMS APPENDIX

1.   A method for providing a relative level of fairness and Quality of Service (QoS) in a wireless local area network (WLAN) network comprising:

identifying a set of non-interfering access points;

dividing a Contention-Free period (CFP) into one or more slots;

assigning one or more of the so divided slots to an identified access point based on the number of users associated with the access point and to maximize a lower bound of a slot-to-user ratio;

allowing only the identified set of non-interfering access points to transmit during a so divided CFP slot; and

allowing all access points to transmit after the end of the CFP.

2.   (Canceled).

3.   (Canceled).

4.   (Canceled).

5.   The method as in claim 1 further comprising:

assigning at least one so divided slot to each identified access point.

6.   The method as in claim 1 further comprising controlling each access point making up the identified set of non-interfering access points to ensure each access point begins and ends a transmission during the CFP slot.

7.   The method as in claim 1 further comprising:

transmitting an instruction to initiate transmission of one or more beacon messages to prevent users associated with access points from transmitting prior to the beginning of the CFP.

8.   The method as in claim 7 further comprising:

transmitting an instruction to initiate transmission of one or more beacon messages such that no two adjacent APs in an interference graph may send beacon messages simultaneously.

9.   A system for providing a level of fairness and Quality of Service (QoS) in a WLAN comprising:

a controller operable to;

identify a set of non-interfering access points;

divide a Contention-Free period (CFP) into one or more slots;

assign one or more of the so divided slots to an identified access point based on the number of users associated with the access point and to maximize a lower bound of a slot-to-user ratio;

allow only the identified set of non-interfering access points to transmit during a so divided CFP slot; and

allow all access points to transmit after the end of the CFP.

10.   (Canceled).

11.   (Canceled).

12.   (Canceled).

13.   The system as in claim 9, wherein the controller is further operable to assign at least one so divided slot to each identified access point.

14.   The system as in claim 9 wherein the controller is further operable to control each access point making up the identified set of non-interfering access points to ensure each access point begins and ends a transmission during the CFP slot.

15.   The system as in claim 9, wherein the controller is further operable to transmit an instruction to initiate transmission of one or more beacon block messages to prevent users associated with access points from transmitting prior to the beginning of the CFP.

16.   The system as in claim 15, wherein the controller is further operable to transmit an instruction to initiate transmission of one or more beacon messages such that no two adjacent APs in an interference graph may send beacon messages simultaneously.

17.   The system as in claim 9 further comprising one or more sets of non-interfering access points, each set of access points operable to:

transmit during at least one CFP slot; and

transmit after the end of the CFP.

18.   A system for providing a relative level of fairness and Quality of Service (QoS) in a wireless local area network (WLAN) network comprising:

means for identifying a set of non-interfering access points;

means for dividing a Contention-Free period (CFP) into one or more slots;

means for assigning one or more of the so divided slots to an identified access point based on the number of users associated with the access point and to maximize a lower bound of a slot-to-user ratio;

means for allowing only the identified set of non-interfering access
points to transmit during a so divided CFP slot; and

means for allowing all access points to transmit after the end of the
CFP.

19.   (Canceled).

20.   (Canceled).

21.   (Canceled).

22.   The system as in claim 18 further comprising:

means for assigning at least one so divided slot to each identified
access point.

23.   The system as in claim 18 further comprising means for
controlling each access point making up the identified set of non-interfering
access points to ensure each access point begins and ends a transmission
during the CFP slot.

24.   The system as in claim 18 further comprising:

means for transmitting an instruction to initiate transmission of
one or more beacon messages to prevent users associated with access points
from transmitting prior to the beginning of the CFP.

25.   The system as in claim 24 further comprising:

means for transmitting an instruction to initiate transmission of
one or more beacon messages such that no two adjacent APs in an interference
graph may send beacon messages simultaneously.

IX.   **EVIDENCE APPENDIX**

None.

X.   **RELATED PROCEEDINGS APPENDIX**

None.